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THE OFFICIAL U. S. ARMY MAGAZINE



ARMY INFORMATION DIGEST

THE OFFICIAL MAGAZINE
of the
DEPARTMENT OF THE ARMY

The mission of ARMY INFORMATION DIGEST is to keep personnel of the Army aware of trends and developments of professional concern.

THE DIGEST is published under supervision of the Army Chief of Information to provide timely and authoritative information on policies, plans, operations, and technical developments of the Department of the Army to the active Army, National Guard, and Army Reserve. It also serves as a vehicle for timely expression of the views of the Secretary of the Army and the Chief of Staff and assists in the achievement of information objectives of the Army.

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NEITHER darkness nor encircling gloom obscure the target when the soldier is equipped with the sniper-scope shown on front cover. Powered by a battery pack, the weapon-mounted infrared source emits invisible rays which are reflected back from objects in their path, then picked up by the telescope tube as a visible image. The device is one of many enhancing Army mobility and combat power.

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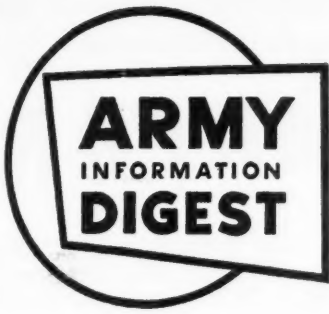
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For explanation of abbreviations used, see AR 320-50.



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Enemy-subjugated peoples can be a dynamic force for victory when properly motivated according to principles of

SPECIAL WARFARE

THE ARMY is planning for any possible future war without being mentally handcuffed to the last war. Not only has science developed an arsenal of super weapons which are continually modifying our concepts for the tactical employment of our conventional forces against an enemy, but it is opening an area of planning for the use of enemy-subjugated people against their oppressors.

Something had to be done, for instance, to reduce the increasing effectiveness of the MIGs during the later phases of the Korean conflict. By radio broadcasts and millions of leaflets, the Chinese Communist Air Force pilots were informed that the United Nations Command would give haven and \$50,000 to pilots who would sur-

render their planes to the UN Command. An additional bonus of \$50,000 was offered to the first pilot to do so.

Although the first enemy pilot who actually did land his MIG on a UN air base claimed not to have known about the cash award, the effect of the propaganda effort was immediately noticeable. As a direct result of the combination of that first pilot's defection and the knowledge that other pilots were aware of the UN offer, all MIGs were grounded for eight days. When the MIGs started flying again, they were fewer in number and these were manned by pilots who were more politically reliable than competent air fighters.

Our victory ratio to losses rose perceptibly. Additionally, the Red



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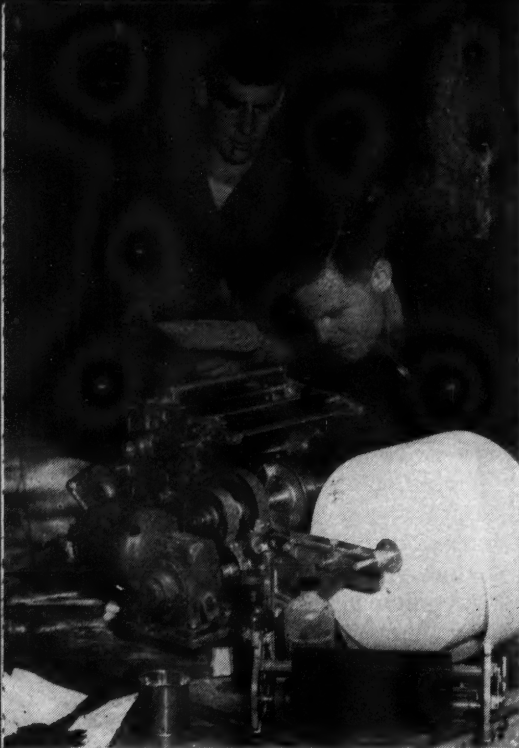
A NEW APPRAISAL



MAJOR GENERAL ORLANDO C. TROXEL, JR.

Chief of Special Warfare

Department of the Army

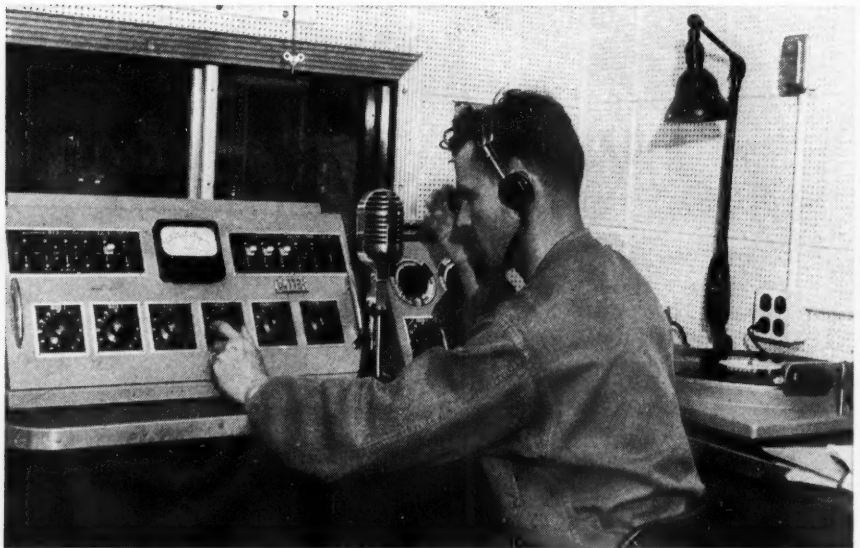


"Psychological warfare is no longer primarily concerned with delivery of hit-or-miss harassing messages and safe conduct passes . . ."

Air Forces in Russia and the satellite countries grounded patrol flights, disrupted training programs, and concentrated on the ideological training of pilots at the expense of combat training.

Here was a simple, inexpensive psychological warfare effort directed at a human attitude (distrust) that caused the enemy to act unfavorably to his own interests.

SPECIAL WARFARE, however, is more than psychological warfare. Special Warfare consists of both psychological and unconventional warfare. It is a carefully planned and coordinated effort to bring about the subversion of the enemy against himself in conjunction with our more conventional operations against him. Additionally, Special Warfare is concerned with the establishment of escape and evasion efforts behind enemy lines to assist our personnel in evading capture



Radio broadcasts "utilize the dissidence within enemy countries to coordinate with our other military operations."

and to provide means for them to escape should they be captured.

The era during which psychological warfare was solely concerned with leaflet and loudspeaker surrender appeals is past. The time when partisan fighters organized haphazardly and fought harassing actions as best they could without coordination with the overall effort is also past.

Psychological warfare is no longer primarily concerned with the delivery of hit-or-miss harassing messages and safe conduct passes to be used if conditions *happen* to be right. Unconventional warfare is no longer limited to spontaneous and poorly supported guerrilla efforts which succeed only if favored by the genius of local leadership and plain luck.

Special Warfare, exploiting its psychological and unconventional warfare aspects, has emerged from a past of sporadic tactical support of local operations to become a strategic operation of potentially major importance to theater commanders. It has extended the battlefield into the very heart of the enemy's country.

As in the case of development of tactics and doctrine for any arm, the first consideration is: *Know your weapon!*

The weapon of Special Warfare is the people dominated by the enemy.

SINCE 1954 an extensive research effort to know the enemy has been conducted under immediate supervision of the Office of the Chief of Special Warfare. Top-ranking social scientists and area experts of the United States have been employed to develop back-

ground information about strategically important and potentially hostile peoples.

For the first time, carefully organized data about the likes and dislikes, attitudes, emotional and intellectual characteristics, and subversive potentialities of critical target groups have been assembled. Additional research is being conducted to develop immediately usable guidance for the best means of communicating with and influencing the thoughts, emotions, and actions of those groups which have the greatest capabilities of reacting effectively in support of our more conventional operations.

THE threat to the free peoples of the world today is from a system of powerfully armed dictatorships. The balance of power between the

During Korean action, psychological warfare teams utilized amplifiers to broadcast to Communist forces near Seoul.



free world and this system of dictatorships lies in the loyalties and inner motivations of the opposed peoples. The balance is not in favor of the dictatorships.

A dictatorship, *per se*, contains a significant proportion of dissident people who must be controlled by force. But the dissident elements cannot be eliminated by force. The liquidation process of itself creates further disillusioned and disaffected groups who, in turn, must be controlled by force. A dictatorship in other words cannot rid itself of its own inner threat.

RUSSIA, the heart of Communist power, has a long history of popular discontent with and revolution against one totalitarian regime after another. In World War I this dissatisfaction resulted in the collapse of Russia's military effort against Germany. In the early stages of World War II some four

million Russian soldiers surrendered freely to the invading Germans. Many of these volunteered to take up arms with the Germans against the Red Army. The Nazis, of course, lost their greatest chance for victory by maltreating rather than accepting the service of most of the Russians under their control.

Considerable publicity has been given to the acceptance by captured American soldiers of Communist indoctrination in Korea. It should be remembered that only 22 Americans refused repatriation at the time of the armistice and nearly half of these have so far returned to this country. On the other side of the coin, 88,000 Communist prisoners of war refused to return to their homes under Communist domination.

Upon the cessation of hostilities in Vietnam, about 500,000 Vietnamese chose resettlement in South Vietnam in preference to remain-





ing in the north under Communist rule.

More recently, there have been revolts in the satellite countries. There has been a steady stream of refugees who risked their lives to escape to the free world from Communist domination.

Nowhere, at any time, has there been any indication that a Communist regime has had the full popular support of the people it dominated. Rather, the very opposite has been frequently indicated.

PRIOR to the Korean conflict, the United States had never been

at war with a power within which there existed such widespread, seething discontent. It does exist now, however, within each potentially hostile country. As such it constitutes a military advantage for the United States which we do not disregard nor minimize.

Our capability of mass, nuclear retaliation is a strong deterrent to World War III. Still another deterrent is the readiness of subjugated peoples to revolt against Communist regimes. In the event of war, the latter could conceivably reduce the need to use nuclear weapons by generating immediate unconventional warfare deep in the enemy's homeland.

During peacetime it is *not* the function of Army Special Warfare to foster discontent behind the Iron and Bamboo Curtains. There is always the small hope that other events may cause Communist regimes to so alter their objectives and philosophies as to humanize them, eliminate the causes of internal discontent, promote prosperity and, in the process, adjust themselves to peaceful co-habitation with the free world—becoming, in fact, non-Communist in thought and action.

During wartime, however, it *is* the function of Army Special Warfare to utilize the dissidence within enemy countries in coordination with our other military operations. As such, the research being conducted under supervision of the Office of the Chief of Special Warfare concentrates upon the understanding of our potential enemies—upon the identification and means of communicating with, guiding, and assisting those groups which have the desire and capability of



"They receive the most rigorous training in living off the land . . . field expedients . . . the art of training and guiding others."

keeping the enemy military effort off balance by any means, from guerrilla operations to the spreading of rumors.

DEVELOPMENT of effective guerrilla operations deep behind enemy lines is a prime objective of Special Warfare. Such operations not only tie down large numbers of enemy troops to protect lines of communication; they also disrupt his logistical support of front-line forces, foment distrust, and have an enormous psychological impact in assisting local freedom fighters.

Both the psychological and unconventional warfare elements of Special Warfare are concerned with the development of guerrilla warfare. By all the communications media at its disposal, the psychological warfare effort in time of

war is directed at building a climate of opinion which will stimulate civilians and soldiers to active guerrilla operations and generate a sympathetic attitude on the part of civilians who do not participate actively. Their ultimate freedom is our goal; their wartime support is our weapon.

PARTISAN fighters and guerrillas initially seldom have adequate equipment, know-how, or organization. The unconventional warfare element of Special Warfare therefore provides Special Forces to equip, train, and organize guerrilla troops.

Special Forces personnel are carefully selected for physical, mental, and character qualifications. They receive the most rigorous training in living off the



Equipped for a drop behind enemy lines, paratroopers . . .

land, demolitions, communications, hit-and-run combat, field expedients, and the art of training and guiding others. They are, in fact, guerrilla instructors and function somewhat as military assistance groups. (See "Fighting Behind Enemy Lines," April 1956 DIGEST.)

Special Forces personnel infiltrate by land, sea, or air, as appropriate, into areas previously determined to be favorable for guerrilla operations by reason of terrain characteristics, presence of profit-

able targets, and the existence of native personnel ready to participate. If feasible, they take with them initial equipment and supplies to equip and train a small guerrilla force and establish communications with headquarters behind our lines for resupply and further instructions.

Considering the continual evidence of a large subversive potential within the powers most threatening to us today, Special Forces provide an extremely flexible and economical means of expanding the



. . . carry necessary equipment for guerrilla operations.



"They take with them supplies to equip and train a small guerrilla force and establish communications behind our lines."

battlefields into an area difficult for the enemy to control.

PSYCHOLOGICAL warfare seeks to encourage those who are hostile to the enemy regime and to demoralize those who support it. There are many means by which this may be accomplished. There are the normal radio, loudspeaker, and leaflet propaganda operations by which enemy people and troops are informed of the true situation at home and at the front. Personal vulnerabilities are exploited. Techniques for industrial, agricultural, political and combat sabotage, slow-downs, and other forms of subversion are suggested. Distrust between the people and their regime is fostered. Surrender appeals are made to enemy troops when the situation is appropriate.

Psychological warfare, however,

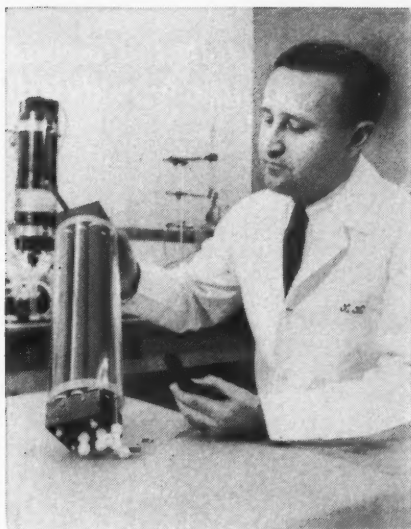
is not limited to propaganda. It includes such efforts as the MIG surrender offer cited earlier. It includes military maneuvers and tactics tailored to special attitudes of opposing forces.

IN SUMMARY, Special Warfare adds the enemy-dominated peoples to the weapons the Army can employ against the enemy within the Army's new concept of extreme depth of battlefields, mobility of forces, increase of fire power, and strategic flexibility. Trained and equipped Special Warfare units are ready for action. The existence of these ready-to-go Army troops and their capability of striking hard at the enemy's greatest weakness, deep within his country, is a strong deterrent to any potentially hostile power contemplating a hot war against us.

Silent Power

For Army's

"Silent Sentry"



A NEW FUEL CELL that produces electricity economically through conversion of the chemical energy of gases is now a reality, and may be adapted to power the Army's new "Silent Sentry" miniature radar set. When fully developed the new battery is expected to eliminate the need for bulky, noisy motor generators in many other types of equipment.

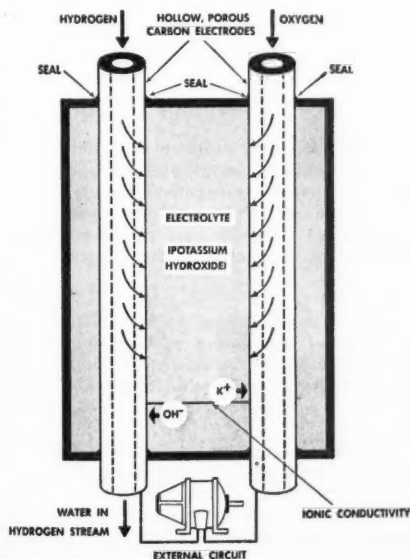
Developed by scientists at the Research Laboratories of National Carbon Company, a Division of Union Carbide Corporation, the silent power

cell was displayed recently at a technical meeting of military and industrial communications and electronics authorities at the U. S. Army Electronic Proving Ground, Fort Huachuca, Arizona.

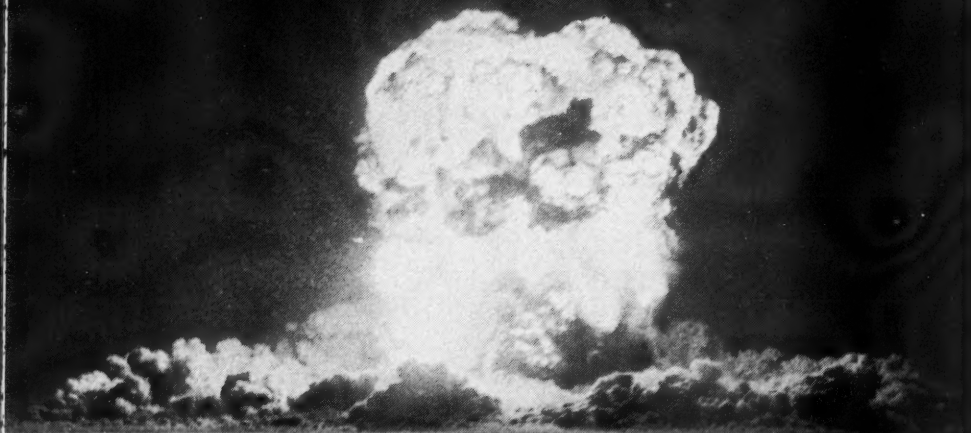
Electricity is produced directly from hydrogen and oxygen in a fuel cell which is from 65 to 80 percent efficient when operated at normal temperatures and pressures. Voltage across electrodes is about one volt. By varying the number and size of cells, any desired voltage can be obtained. Basically the unit is most desirable for high current, low voltage use.

In operation, hydrogen and oxygen are pumped through hollow, porous carbon electrodes that extend through a sealed case filled with potassium hydroxide. The electrolytic process that results produces the electric current. At the hydrogen electrode, the electrochemical reaction with the potassium hydroxide produces water and releases an electron that enters the electrical circuit.

The inherent advantages of the fuel cell make it an ideal source of silent electrical power in remote locations where conventional fuels or water power are not available. Military communications systems, mobile power units, and stand-by power plants are but a few of the expected uses.



As "Dragnet" tells the seconds, time stands still
for an eyewitness who describes his reactions to



TEST SHOT SMOKY

Captain Harry E. Olmsted

IN THE long history of warfare, there is perhaps no more awesome sight and sound than that of the nuclear detonation. And while the image of the mushroom cloud ascendant is perhaps the most fearful symbol of the Twentieth Century, those who have witnessed the big blast at close range, and felt its heat and shock, are relatively few in number. Members of this limited fraternity have discovered that apprehension of the unknown can be every bit as devastating as the weapon itself.

In order to study the effects of atomic blast at close range, and to familiarize troops with this device as a combat ally, a series of tests known as Operation Plumbbob were conducted in mid-1957 by the Atomic Energy Commission in cooperation with the Armed Forces, Federal Civil Defense Administration and other agencies.

In the following article Captain Harry E. Olmsted of *Army Information Digest*, who witnessed the Smoky detonation, records his impressions interspersed with commentary from the AEC-prepared hand book, *Atomic Tests in Nevada*, and other literature which was issued to the observers. This first-hand, eyewitness account should be of vital professional interest to every military reader.

—Editor

ARMY INFORMATION DIGEST

IT TAKES about an hour to reach Yucca Flat from Camp Desert Rock and in that brief period a soldier has the opportunity to think about a lot of things—especially if he is going to witness his first atomic explosion.

I know—because I took that ride.

Camp Desert Rock is an easy two-hour ride on a string-straight highway northwest of Las Vegas, Nevada. It was first opened in 1951 to support observers and troops participating in tests conducted by the Atomic Energy Commission (AEC). Something less than 200 temporary buildings line the sand and rock streets where a part-time station complement of 1,600 conduct the business necessary to the mission of the camp.

Yucca Flat, on the other hand, is reached on a curving, oil-surfaced road which passes through Camp Mercury, the field headquarters of the AEC when tests are conducted in the United States. It lies mostly to the east of the Army desert camp. For men and creatures of nature, it has been a gruelling testing ground for hundreds of years.

Our convoy inched its way out of Desert Rock sometime after midnight. A pale blue light blinked lazily from atop a pole near the center of the camp. It signaled that the latest weather briefing was favorable for the detonation of the atomic device labeled Smoky. If wind and weather conditions had not been just right, a red light would flash

from the pole, signifying that there was a 24-hour postponement.

But tonight it was blue and we were on our way.

Conversation was light, mostly speculation on the chances for Smoky to go. It had been postponed on the three preceding days and was delayed for nine days before that because of other considerations. Only a few of the more optimistic considered this the night.

"A complete weather unit is operated at the test site. . . . The data are evaluated up to one hour before shot time. A shot can be canceled at any time up to a few minutes before the scheduled detonation."

AFTER a few minutes, we braked to a stop at the brightly lit gate to Camp Mercury. Here a civilian guard checked our plastic covered security badges closely—on one side a photograph, on the other a description, expiration date and authentication. He thanked us and waved the vehicle through.

At the second gate there was a similar check. As we waited, the lights from the top of the guard shelter played on a sign which read "ENTERING RADIATION AREA—FILM BADGES MUST BE WORN."

Actually film badges are worn constantly in the Desert Rock area. They are issued upon arrival and are changed each 21 days. After the 21-day period, they are developed by Radiological Safety personnel and radiation exposure, if any, is noted. Only in extremely rare cases does the dosage approach the limits of normal tolerance.

Past Frenchman's Flat the road

CAPTAIN HARRY E. OLMSTED, Infantry, is Production Editor, Army Information Digest.

becomes straight and we were able to speed our pace a little.

The desert air at night is cool and a field jacket felt good. The sky was clear and stars were thick and bright. Frequently the blinking clearance lights of test aircraft gave the impression of stars moving.

Through Yucca Pass and past News Nob my companions and I rode almost silently. As we glanced to the left we saw the AEC control point, now brightly lit and bustling with activity. It was about H minus three hours until Smoky.

"Smoky is one phase of the 1957 tests bearing the overall code name Operation Plumbbob. The Army is participating in tests of Ordnance material and field fortifications; in evaluation of detonation and cloud tracking systems, shielding for engineer heavy equipment, and of

water decontaminating methods; in tests of atomic burst equipment, four observer projects and troop tests of concepts of Infantry operations and doctrine under atomic warfare conditions. Some 400 troops will employ new tactics which may be used on the atomic battlefield. This will see use of troops from the two new types of Army units, the Infantry Battle Group and the Army Aviation Battalion, employed to exploit the effects of an atomic explosion. It involves the aerial movement of a task force from a defensive position by helicopter to secure an objective area near ground zero and the aerial re-supply of this task force entirely by helicopter."

BEFORE we left Desert Rock we had been told of a change in the original plan which called for us to occupy trenches about 2½

During a practice attack, H-21 helicopters stream in to discharge troops preparing for the infantry phase of the test.





Attacking infantrymen leap from their helicopter at the test site during preparatory training exercises.

miles from ground zero. There had been a shift in wind direction which would bring the fallout pattern over the trenches. Because of this we were to be moved to an observer area some eight miles away from Smoky's 700-foot tower.

It was still dark when we came to the de-trucking area. A number of cars and trucks were parked near the road. Troops of Task Force Warrior taking part in the exercise that was to follow the blast had already moved to defensive positions. They were men of the 1st Battle Group, 12th Infantry from Fort Lewis, Washington, and a platoon of Canadian infantry from the Queen's Own Rifles, Calgary, Ontario.

The exercise plan called for a task force from the Infantry battle group to load on helicopters after the blast and fly into pre-determined objectives. The 'choppers, twin-rotor H21s and single-rotor H34s, had flown in from Fort

Bragg, North Carolina, and Fort Benning, Georgia.

The troops had been preparing for this maneuver for a month. Their task would be to demonstrate that survival for trained soldiers in an atomic battlefield is practicable—that use of helicopters to airlift troops in exploiting the effects of an atomic explosion is swift and sound—and that airlifted troops can quickly seize the objective area following an atomic explosion and can be resupplied by helicopters.

In other words, this particular blast would aid in studying what role the helicopter-borne units will be able to play in the highly mobile tactics of the atomic battlefield.

WE WALKED the last few hundred yards uphill to the observer area and found that we had an excellent vantage point. To the northeast we could see the top of the Smoky tower marked with a blinking red light.

It was now less than two hours before shot time. From loud-speakers in the area came a voice which slowly and almost ominously announced "This is Dragnet."

"The communications system for the countdown marking the minutes before the atomic detonation is popularly known as 'Dragnet', a term borrowed from the Test Director's air operations radio control net. Instructions go to observer areas, posts in forward areas, and control point installations over telephone lines. Radio provides the countdown to pilots. By radio relay, Dragnet is heard by off-site viewers at Angel's Peak. The broadcast is live until H minus 15 minutes, at which time a tape recorder is hooked into the sequence timer. This, however, can be interrupted with special announcements if required."

For what seemed to be only a few minutes we sat or stood at the crest of the hill making small conversation.

"This your first one?"

"Man, I remember when Diablo was supposed to go"—this from a "veteran" of four or five shots during the 1957 series.

Just as Diablo was mentioned, Dragnet was finishing one of his monotoned soliloquies—"In the event of no detonation—do not remove goggles and hold position until advised."

Shot Diablo was the one that didn't go off. That experience, the soldier explained, was like no feeling he ever had before. I could now believe him.

Dragnet told us to put on our special density goggles, or turn away from the zero point at one minute before the detonation.



A platoon of the Queen's Own Rifles of Calgary, Alberta, Canada, stands inspection before taking part in the atomic exercises with U.S. troops.

We could, he said, turn around after the fireball had dissipated.

"The effects of the flash of light are essentially no different from those of sunlight. If you look directly into the sun (or at a photographer's flash bulb), you get black spots in front of your eyes for a few seconds or a few minutes. If you were much closer to the sun or if you used binoculars, eye damage might result.

"On-site the thermal (heat) waves can injure eye tissues and cause permanent eye damage if one looks directly at the fireball. . . . At shot time all personnel on or above the test site wear extremely dark glasses or turn away; binoculars are prohibited.

"Off-site the same precautions should be followed. . . . The flash can cause 'black spots' so that momentarily you can't see, or the flash can startle you if it is unexpected. This effect can be experienced at night many miles away. . . . There have been no known cases of serious eye damage from light effects to people off-site. Some observers on nearby mountains, who did not wear dark glasses nor turn away, have reported temporary blind spots."

AS H MINUS fifteen minutes approached, another voice from the loudspeaker informed us that zero time had been postponed thirty minutes.

It was really cold now—and yet only the day before the temperature had been in the neighborhood of 100 degrees. Observers wrapped in blankets and wearing heavy jackets and sweaters groped around the sandbagged area.

Time passed rapidly, and we hardly noticed as Dragnet counted off the minutes.

Then, "Put on goggles or turn away—Do not remove goggles or face burst until fire ball dissipates."

Nervous laughter and comments like "Think she'll go?" merged in a low, steady murmur. The count continued — thirty, twenty-five, twenty, fifteen - - -

I was sitting on a row of sandbags, facing away, my forearm covering my eyes even though they were closed.

Just after the final tone squeezed through the sound system I was conscious of an unbelievable white, searing light. It was dark, but yet it was light.

I felt isolated and alone because of the complete silence all around me. For a time that seemed like a full minute but was actually only a few seconds, I tried to close my eyes even tighter. A hurried voice told us to turn around slowly and open our eyes. This voice was joined by probably a hundred others, each a little louder and a little faster.

Now I saw what was undoubtedly the most astounding sight I had even seen.

Where the blinking red light atop the tower had been visible only a minute before there now was a rose and black colored ball rising rapidly upward. For an instant I was dumfounded. I think I expected to see the blinking light again.

"The materials of the nuclear device, the resulting fission products, and materials in any firing platform such as a tower and its cab are vaporized by the heat and become

part of the fireball, a luminous sphere which appears as the air is heated to temperatures approaching a million degrees Centigrade. A radioactive cloud is formed by cooling of the fireball."

THE mushroom formed almost immediately. To the left and rear

gan to echo the blast like the rumbling roll on a kettle drum. It kept on for an unbelievable length of time.

As I watched, the entire mushroom was ballooning outward and upward. It turned from its dirty dark gray to an amazingly bright and beautiful shade of purple.



Helicopter-borne troops of Task Force Warrior move forward from their landing area to assault simulated Aggressor positions at the test site.

of the shot an entire mountain was ablaze. What red glow was left in the center of the spectacle was now surrounded by a dark, dirty gray cloud. Only now was I conscious that the sun's rays had begun to peek over the tops of the mountains on the right.

Without any warning two successive rifle-like reports banged into our position. I didn't notice a surge of warm air, but others said afterward that they did. I saw a wave of churning dust caused by the blast moving across Yucca flat towards our position. The mountains surrounding Yucca Flat be-

"One second after detonation, the fireball from a nominal 20-kiloton (a kiloton is equivalent to 1,000 tons of TNT) burst reaches its maximum apparent radius of about 600 feet and begins to rise like a gas balloon. Its average rate of climb in the first minute is about 250 feet per second. [Smoky was rated at more than the nominal yield.] "By the end of 10 seconds, the intense luminosity of the fireball has almost died out, the shock wave has traveled 12,000 feet and passed the region of heavy damage, and formation of the cloud has begun. The immediate effects of

the explosion have run their course, leaving only the delayed effects of residual radiation and the possibility of more distant air blast effects.

"The cloud, containing radioactive oxides of fission products and more or less dirt and debris . . . rises high into the air. The base of the cloud's stem settles back onto the firing area, while the cloud itself is carried away and dispersed by winds.

"Neither heat nor the immediate nuclear radiation is hazardous outside of the general firing area of the test site. Beyond about 7,000 feet the immediate nuclear radiation from detonation of a nominal-yield device is virtually harmless. The heat is noticeable at 10 miles only as a wave of warmth."

Soldiers of the battle group who had been working and training in the desert for over a month felt such a sense of relief that they sent a rousing cheer toward the majestic monument Smoky had just built. It was almost like applause for an outstanding performance.

Under the now giant cloud, a creeping base became noticeable to me for the first time. I'm sure that it was there before but I was so taken with the beauty and size of the cloud that I hadn't noticed. This base formed what appeared to be a cushion and a floor for the mushroom. As it boiled outward, I could see fire beneath it. Vegetation on the desert floor was burning.

Now ground-fired rockets were shooting into the cloud to bring back data on fallout density and direction.

For the first time, the awed ob-

servers were able to speak. Or possibly it only seemed so because I had become so engrossed in watching that I was unaware of anything being said. Throughout the group there was a certain solemnity and respect for the sight which they were witnessing.

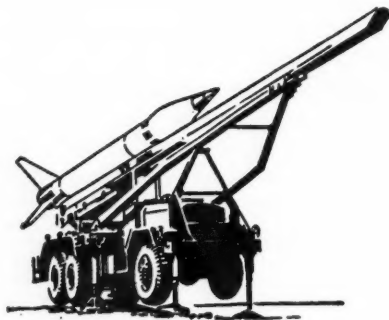
The huge mushroom finally reached a height of 35,000 feet, nearly seven miles, and the striking blue or purple light was seen 400 miles away.

APPROXIMATELY forty-five minutes after Smoky emitted that first brilliant white light five helicopters transporting the Pathfinder group—whose mission was to land in the objective area, conduct a radioactive survey and serve as a guide for the task force—could be seen flying at low level into the objective area. About forty-five minutes later helicopters dropped into predetermined landing zones to pick up the waiting and confident infantrymen.

Against the backdrop of the dissolving, now lighter grayish-brown and streaked shadow of the cloud, I watched a small part of our pentomic Army flying toward the objective area. Upon arrival elements of the task force occupied key terrain features. Helicopter-borne patrols were airlifted to secure areas otherwise inaccessible; other helicopters were busily engaged in their changed mission of resupplying the task force with food, ammunition, equipment and supplies.

SURELY every man involved felt as I did—that now we had seen the proof of what we had known, but maybe only half believed.

The men who man this weapon know it is ready and able to fulfill its important role in NATO defense forces, whether it is called Honest John or



Der Wahrliche Johann

Lieutenant Robert B. Henry

CALL IT what you may—and we often use the German designation, *Der Wahrlche Johann*—the Honest John 762mm. Rocket is filling the vital need for which it was designed. It has proved that it is ready and able to meet its assigned task in the North Atlantic Treaty Organization family of forces.

Much has already been said and written concerning the development of this new artillery weapon by the scientists, engineers and others who designed, planned and perfected it. But we—the ultimate consumers, the men who man and use it—are the *experiment in the field*. We believe that a report and appraisal from our angle is about due.

We can report from our own experience, because three or four times yearly we practice tactics

with live firing at Grafenwohr. This is followed by a field training exercise at the end of the training year. As a result, we are convinced that we are ready for any emergency.

Der Wahrlche Johann now is employed by separate batteries, assigned to field armies and further attached to corps. There are three launchers in each battery, with a headquarters section, communications section, survey section, radar section, and fire direction center. The launcher sections are supported by a rocket assembly and transport platoon.

Each battery has an authorized strength at present of 8 officers and 127 men—but this may change when plans for transformation into a battalion are perfected. Such a change, however, will be primarily one of administration, since just one launcher will be added to the present set-up and personnel will be built up to meet new administra-

FIRST LIEUTENANT ROBERT B. HENRY, Artillery, is Executive Officer, 3d Field Artillery Battery (762mm. Rocket), in United States Army Europe.

tive needs and requirements.

WHILE the general manner of employing the new weapon may of course vary, the most accepted use is to dispatch the launchers from a central rendezvous, or "hide" area. The great mobility of the launcher enables it to move long distances over rough terrain.

Arrived at the firing site—usually a previously selected and surveyed position—the crew faces a gunnery problem that is somewhat unique to artillerymen. The fire direction center is located in the battery rendezvous area. The launcher crew communicates by wire or radio. No charts are necessary in the Fire Direction Center since firing data is computed mathematically.

HAVING received the necessary aiming data, the launchers get rockets on the way. Because the re-

sulting burst of flame and noise pinpoint the place of launch, the launching unit immediately withdraws to the central "hide" area.

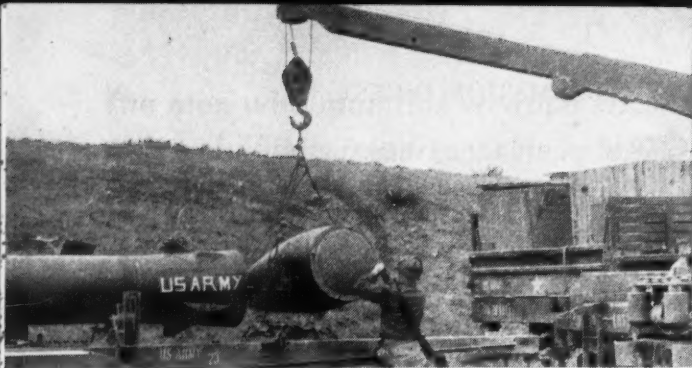
It is entirely possible to move all three launchers at one time to widely separated sites and still fire them simultaneously at the same target or at different targets. Should the target change after the fire mission has commenced, the launcher can easily be traversed onto the new target.

THESE tactics are practiced three or four times yearly. Live firing is conducted at Grafenwohr, where the weather varies between wet and very wet so that the unit and its men necessarily undergo proving conditions. We usually fire about twelve rockets each year.

The battery receives three tests, culminating in the big Corps Artillery test at the end of the training year. This test, toward

Honest John rocket is loaded onto a barge for crossing of Rhine River during a maneuver.





ASSEMBLED during annual training test, rocket warhead is . . .

LOADED onto launcher preparatory to being . . .



which all efforts are naturally pointed, lasts 30 hours during which three live rockets are fired and three are simulated.

In the Corps Artillery tests, the unit is alerted early in the morning, and immediately moves out to an alert assembly area. There the battery commander, accompanied by reconnaissance personnel, meets the task force commander. After learning the location of the battery rendezvous area, he is allowed to move selected portions of the battery forward to this area during the day to prepare launcher sites and establish communications.

Meanwhile, in the rear assembly area, rockets are being assembled. That night the main body of the battery moves forward under cover of darkness. Loading of the launchers begins as soon as the bat-

tery reaches the forward area, and very soon fire missions begin coming in. Each launcher gets off one live round, then displaces to fire a simulated mission. The test is completely run off by the next morning.

AS important as this event is, we consider the yearly field training exercise to be the *real* test. Then it is that the battery plays a war game across the German countryside. Moves come at any time, for any distance, over unknown territory that must be "reconned" to conceal the 45 vehicles. Launcher sites must be selected.

Although no live ammunition is fired, time and space factors are realistically played for every mission. The field training exercise usually runs for eight days. When

the exercise is completed, the unit has added confidence in its own ability, plus a better realization of actual field problems that would be encountered in an emergency.

MOST of the participating officers and troops have been trained entirely by the battery. They are not graduates of MIT; they are not walking brains; they are not led by older Army men who have been in the rocket business since its inception.

With normal intelligence any man can learn to handle any job in the battery. Technical schools are in order for some personnel directly concerned with the special weapons capability of the unit, but if necessary the unit itself is capable of conducting such special-

ized courses and related training.

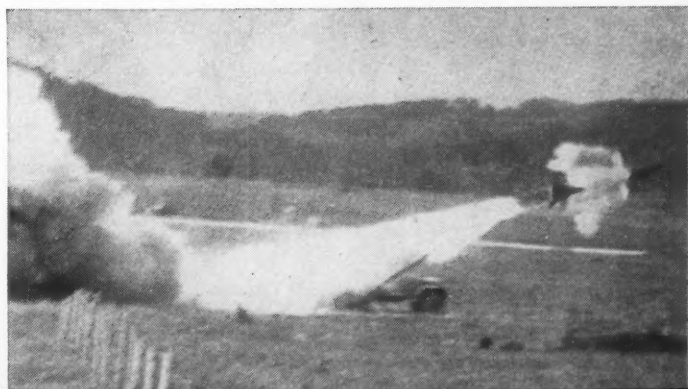
Most of the men are young, and their officers, too, are young men. The ranking officer is a captain, and the lieutenants usually are on their first tour of duty. Possibly never before in any army has so much responsibility been shouldered by such young men.

TODAY Honest John is no longer on trial in Europe. It has proved that it is ready and able—and the men who man it are willing. By any other name—Honest John or *Der Wahrliche Johann* or anything that future foes might dub it—this superb artillery weapon will shoot as sweet and fair and far and true as any artilleryman could hope. We who man it can assure the world of that.



*MOVED from
hide area to firing
site and . . .*

*FIREED with a
blast and smoke
from ignition of
spin rockets.*



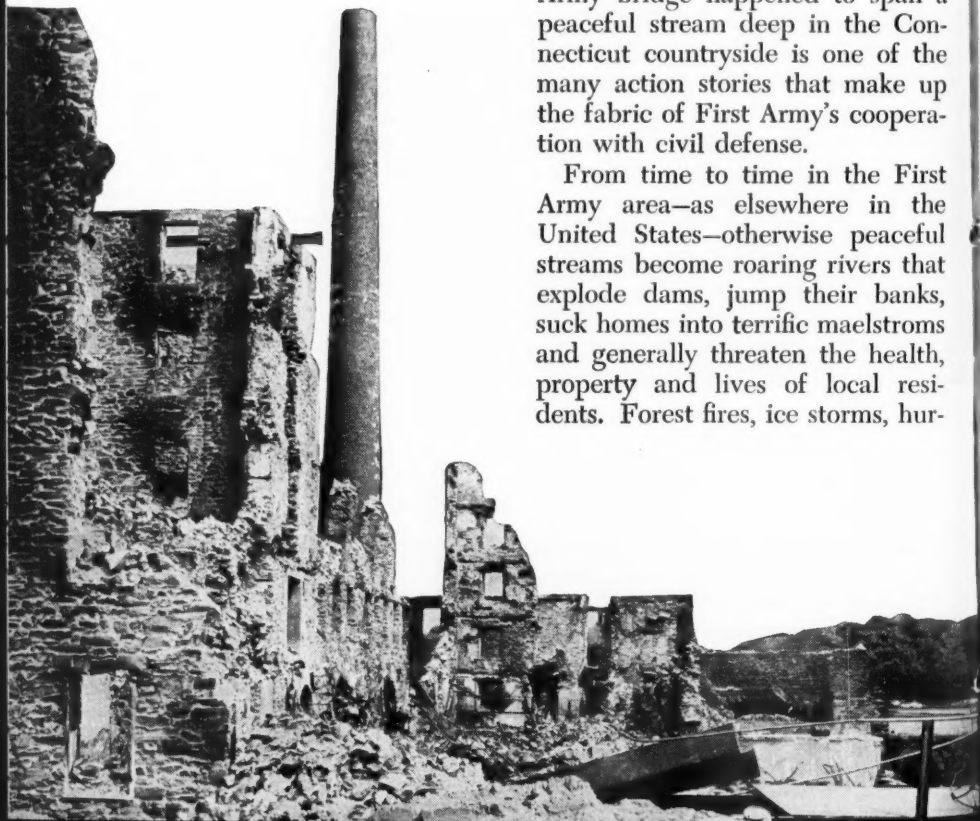
**Rescue and relief activities of First U. S. Army
illustrate the broad scope of**

Army Cooperation With Civil

Lieutenant General Thomas W. Herren

DRIVING through the rolling terrain of western Connecticut, the motorist descends into a valley and suddenly sights something strange yet familiar—a Bailey bridge. The account of how this Army bridge happened to span a peaceful stream deep in the Connecticut countryside is one of the many action stories that make up the fabric of First Army's cooperation with civil defense.

From time to time in the First Army area—as elsewhere in the United States—otherwise peaceful streams become roaring rivers that explode dams, jump their banks, suck homes into terrific maelstroms and generally threaten the health, property and lives of local residents. Forest fires, ice storms, hur-



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Scenes such as this ravaged street in Winsted, Conn., greeted rescue workers following the disastrous hurricanes and high water of 1955.



ricanes and other natural disasters may occur. As homes are lost, as power lines go crackling into the streets and transportation is disrupted, emergency calls are placed through established channels requesting blankets, cots, food, vehicles, generators, medical supplies, pumps, diapers and Bibles. Everything needed to preserve the health and spirit of the stricken people is requested.

It is, of course, a normal human instinct to offer all in one's power to help people in danger. Established military procedure for the relief of local disaster perforce emphasizes that such relief is primarily the responsibility of civilian organizations such as police and

fire departments or local and state civil defense agencies. Normally, only when all forces and resources available to these agencies have been committed is Federal military assistance rendered to help reduce a domestic emergency.

Undue reliance upon the military establishment is discouraged, not only because capabilities are limited, but because the military's first consideration must always be its mission—defense of the United States against enemy forces. To dissipate the Army's strength in a

LIEUTENANT GENERAL THOMAS W. HERREN, until his retirement on 31 July, was Commanding General, First United States Army, Governors Island, New York.

disaster situation might prejudice its mission at the time. For these reasons civil authorities are constantly impressed by liaison officers with the need for civil preparation.

However, when conditions warrant, the Army Commander will, as has been done so many times in the past, use every means to relieve human suffering with utmost speed.

WHEN the 1955 floods struck New England, a transportation officer and representatives of other branches were dispatched to the scene by First Army with the mission of establishing a local Transportation Control Center to coordinate light aircraft rescue operations and other military transportation. An Emergency Operations Center was established at First Army Headquarters to coordinate and direct the provision of personnel, supplies, equipment, and facilities. The Center was operated jointly with representatives of the Navy, Air Force and any other independent commands involved. During the disasters of 1955, this Center hummed with activity.

AS the department having primary responsibility for coordinating the planning and controlling military assistance rendered to civil authorities in domestic emergencies, the Army occupies a unique position among the Federal military services. The Departments of the Navy and the Air Force are also responsible for rendering such assistance, consistent with the requirements of their primary mission, as may be deemed necessary by the Zone of Interior (ZI) Army commander who is coordinating military assistance in the emergency.

Although ZI Army commanders will control all military domestic emergency operations within their areas, Navy, Marine Corps and Air Force units which are committed retain their own chains of command. National Guard units are not Federalized during domestic emergencies but remain available to their governors as state troops. On occasion, however, these troops might be placed under the operational control of the ZI Army commander through arrangements with the respective governors. In some circumstances, certain Army Reserve specialists may be ordered to active duty on a voluntary basis during an emergency.

The organization perhaps most closely associated by the public with disaster relief is the American National Red Cross, organized for the relief of human suffering. First Army works closely with the Red Cross in insuring adequacy of supplies. Since the Red Cross national organization does not generally maintain reserve stocks of equipment and supplies for disaster use, the Commanding General, First Army, acting in accordance with regulations, makes such supplies available in time of need and the Red Cross reimburses the Army.

WHEN First Army receives a mission of supporting civilian organizations—either from higher authority or by its own determination of the situation—it has an unequalled reputation to live up to. In the floods and hurricanes of the recent past, great credit was accorded its personnel.

Referring to Army cooperation extended to the hurricane and flood-stricken state of Connecticut

during the disastrous summer of 1955, Governor Abraham Ribicoff said, "I know the Army's accomplishments since the beginning of the Republic. I don't think any group has a record that can compare with it. We hear of red tape, but during the flood all I had to do was to make a telephone call to the Army and assistance was forthcoming."

One of those telephone calls, incidentally, secured Bailey bridges for Connecticut, to replace spans destroyed by floods. Gradually, as the danger phase ended and the rehabilitation phase began, the Corps of Engineers took over the operations with civil authorities and First Army withdrew to performance of its normal missions. (See "Hurricanes and High Water," January 1956 DIGEST.)

THE SHAPE of possible things to come, however, geometrically increases the problem of military aid to the civil population. The capability of unfriendly nations to wage nuclear warfare by attacking many cities simultaneously presents a problem unequalled by any combination of natural disasters.

Coupled with the problem of alleviating the suffering of individual victims of an enemy attack on the continental United States is the need for concurrent mobilization for a retaliatory effort. During such a period, the Army's role of coordination, and control of military assistance to civil authorities, becomes vitally important.

TO COPE WITH such a situation the Army has developed disaster emergency teams which



Devastation such as this following the New England 1955 hurricanes brought prompt response from Army agencies in the area.





Chlorinated lime is given to citizens in Norwalk, Connecticut, to prevent disease from breeding in flooded basements.

are ready for immediate employment. These teams can perform a variety of relief functions during domestic emergencies. To further expand its capabilities in this field, the Army has instituted a program designed to orient military skills and techniques to the rendering of assistance during civil disasters. This program will result in a better understanding by military personnel of techniques and procedures involved in civil disasters and will increase the number of personnel capable of rendering assistance.

FIRST United States Army initially formed the pilot civil defense section among the continental armies. Since early 1956, it has assigned a specific position for civil defense to its G-3 section. The chief of this civil defense division has become established as the key First Army staff officer to coordinate military support of civil defense.

His division operates closely with headquarters of Region I of the Federal Civil Defense Administration at Harvard, Massachusetts, where A. D. O'Connor coordinates the activities of the eight state civil defense directorates in New England, New York and New

Jersey—an area of responsibility which coincides with the First Army area. Liaison with Region I FCDA headquarters is virtually on a day-to-day basis.

Upon notification of a disaster, the Commanding General, First Army, dispatches a liaison team to headquarters of Region I. As soon as conditions allow, however, aid of a military nature is withdrawn from the civil areas to enable the Army to get on with its priority task of defense.

EACH YEAR, a nation-wide Federal government readiness exercise called Operation Alert is conducted. All Federal agencies participate in the exercise to some degree. Major roles are played by the Office of Defense Mobilization, the Federal Civil Defense Administration, and the Department of Defense. Many theoretical problems encountered in this exercise are based on an enemy nuclear attack against the United States.

One of the "assumptions" of Operation Alert is the penetration of our Nation's air defense by a portion of the attacking force. Another assumption is that ports, industrial areas, bases of military retaliation and population centers would be high on the attacker's list

A mobile communications unit takes to the field to support engineers combating flood damage in New York State.



of target priorities.

The cities of the First Army area fit with ease into all these criteria, giving urgency and immediacy to the realization that today's front door may be tomorrow's front line.

Operation Alert 1957 provided valuable practice for emergencies. It tested streamlined procedures and training of personnel throughout the First Army area. As a continuing endeavor, the organizing and training of provisional type disaster teams is another activity calculated to keep the command effective under any set of conditions, no matter how grave.

One point, however, needs reiteration. In essence, civil defense is just that—a *civilian* undertaking. The military participates only when the civil authority lacks the means of coping with the emergency. Those individuals who wish-fully hope for the best and do

nothing because they think the cavalry will always arrive to pull them out may wind up deeply disappointed, or dead.

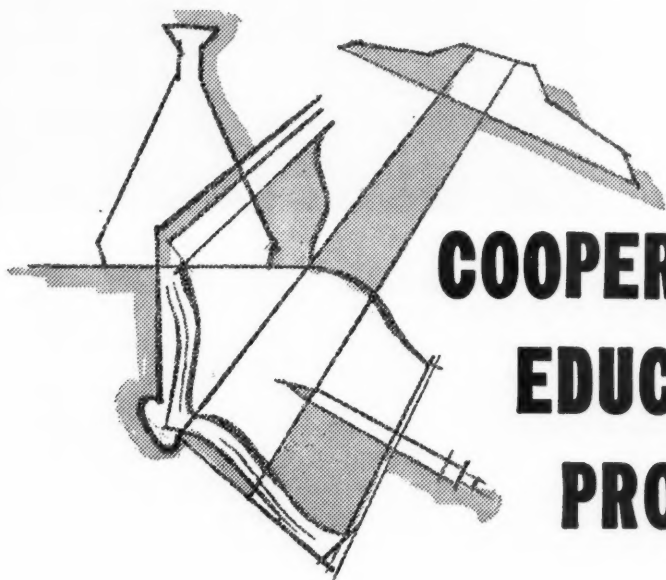
Every combat soldier knows that when a comrade is shot by a sniper, the sniper must first be eliminated to prevent more casualties before the wounded man can be treated. In case of enemy attack, this same proven principle may have to apply regardless of the magnitude of the circumstances. For with national survival at stake, the retaliatory power of the United States military forces must be maintained at its greatest possible strength.

What disasters—natural and man-made—lie in the future, no one can say. In First Army, unstinting efforts are being made to anticipate the requirements and prepare for them, by developing skills and building soundly on the basis of recent experience.

ARMY REGULATION 360-55, dealing with community relations, has been distributed to major units in the field. The regulation states that although the primary staff responsibility for active and good community relations rests with local Information Officers, all Army personnel are individually responsible for making the program a success.

The regulation urges military participation in civic activities such as Parent-Teachers Associations, business and professional clubs, youth, veterans, and religious organizations, as well as participation in civilian ceremonies and public events, speeches, and open house for the general public and special-interest groups.

**Knowledge and experience, theory and practice
are combined for mutual advantage
as the Army takes a leading role in the nation-wide**



COOPERATIVE EDUCATION PROGRAM

James M. Pride

"THEORY can best be learned in school; an understanding of man and his mechanisms can be learned only where they operate—in business and industry. The major idea is that of balanced training."

This credo led Dean Herman Schneider of the University of Cincinnati to originate the Cooperative Plan of Education in 1906. Since then, his plan has spread to more than fifty colleges and universities. Today, thirty Army installations throughout the Nation are actively

cooperating in this program of "knowledge plus experience."

In essence, the Cooperative Plan of Education is an educational program which combines the theory and knowledge of the classroom with practical training and experience in industry. Students alternate between periods of academic instruction at college and related experience on the job. Work phases are a regular and essential element of the educational process and are included in the requirements for a degree.

The Cooperative Plan, in effect, provides an opportunity for academic theories to be applied and tested on the job. It acquaints the student with the methods of in-

JAMES M. PRIDE is Special Assistant to the Chief, Training and Development Division, Office of Civilian Personnel, Office of the Deputy Chief of Staff for Personnel.

dustrial production and related problems. Work periods allow a student to develop in the way in which his mind most naturally works—by giving meaning and reality to study and theory as applied in research laboratory or production shop. The work experiences also provide an appreciation of human elements involved and help to develop sound techniques in dealing with people.

STUDENTS participating in the program are employed in pairs, with one working while his alternate is in school. At the end of the college quarter they change places. Thus the job is filled continuously and only one personnel space is utilized.

Job assignments are directly related to fields of academic study. Thus the physics major might work as assistant in a physics lab, and the student preparing for a mechanical engineering degree might

be engaged in a machine shop, materials test laboratory or a design drafting room.

Specific tasks and responsibilities are planned by the employing organization. Careful consideration is given to the student's interests, his grades and potentialities, and the recommendations of his college cooperative coordinator. The standard philosophy here is to fit the assignment to the individual student and particularly to his level in college.

A young man, for example, who has just completed his first quarter in college, in which he took mechanical drafting and college algebra, would be assigned tasks requiring some drafting and basic mathematical calculations. During his junior year he might be assigned to assist a professional engineer in designing the components of a piece of complex equipment. As the student progresses toward a degree, work assignments be-

Aspiring scientists, chemists, physicists, mathematicians and engineers receive on-the-job training at Redstone Arsenal, Huntsville, Alabama.

Co-eds, too, receive training, as this Northeastern University student working at the Quartermaster Research and Development Center.





Welding elements of a complicated electron tube, this Drexel Institute student works at the Signal Corps Engineering Laboratories.

come progressively more difficult and responsible.

THE advantages of this program are recognized not only by the colleges and an ever-increasing number of students but industry, too, has rallied to its support. More than 4,300 industrial firms and government agencies are now co-operating with colleges by providing developmental experiences to some 20,000 "Co-op" students.

As shortages of professional personnel become more acute, interest in this program and its potential as a partial solution to the problem is increasing. Well-qualified high school graduates who are financially unable to continue their education, look to the Cooperative

Plan as a way of earning college expenses. Colleges see the plan and its alternating school phases as a means of increasing total enrollment without the expense of providing added classroom space.

Industrial and government agencies are realizing significant benefits from the program. The students' enthusiasm and initiative permeate the organization, stimulating overall efficiency. Particularly during their junior and senior years, the "Co-ops" are able to offer technical contributions and ideas of marked value.

Assigning sub-professional tasks to the students frees professional employees for more productive effort, making possible better utilization at the professional level.

Finally, the plan offers the employer an opportunity to develop a pool of highly qualified, well-trained students with the potential to fill professional vacancies upon graduation.

ARMY interest in the program was accentuated in the post World War II period when it was evident that the shortage of scientists and engineers was becoming a problem of ever-increasing magnitude. "Co-op" students, it was felt, could be used to supplement sub-professional staffs in Army research and development activities. The installations could provide worthwhile job experience that would

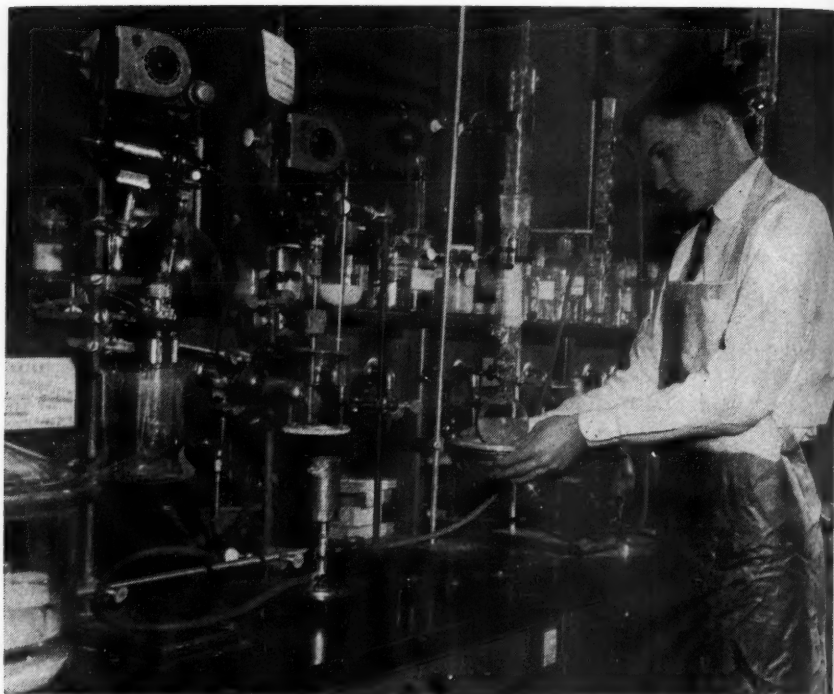
contribute to educational development of the students, and the Army in turn could expect to obtain a reasonable return on every labor dollar invested.

Frankford Arsenal in Philadelphia was the first Army installation to participate. In cooperation with Drexel Institute and the U.S. Civil Service Commission, an employment plan was developed, and the first group reported for duty in June 1949. A number of students have been employed each year since that date. Recent revisions and improvements in the program are expected to increase still further its value to the Arsenal.

The Army's largest cooperative



Working for a degree in bacteriology at Utah State Agricultural College, two students perform microscopic analysis at Dugway Proving Ground.



A set-up for synthesizing rubber monomers is performed by a student trainee at the Quartermaster Research and Development Center.

program was started in 1952 at White Sands Proving Ground in collaboration with New Mexico A & M College. The program included carefully planned work assignments and on-the-job counseling and guidance. Students from other colleges and universities have since been employed in the program, bringing the total at White Sands to 209 participants.

Since 1952 formalized Cooperative Education Programs have been initiated at 30 Army installations nation-wide. Currently more than 700 students are employed, making the Army one of the largest employers of "Co-ops" in the United States. Programs—drawn up in cooperation with colleges and univer-

sities located near centers of Army population—are carefully designed to provide students with a variety of experience in fifteen fields of engineering, science, accounting.

COOPERATIVE students employed by the Army are paid a salary while in a work status. When they return to college, they are placed on leave without pay.

Most of the students enter at the GS-2 level with a salary of about \$1.42 an hour. Periodic promotions are authorized by the U.S. Civil Service Commission as the student progresses toward his degree. Satisfactory progress during the work phases and completion of each fourth of the total academic

requirements establishes the student's eligibility for promotion. Thus the student progresses from GS-2 to GS-5 prior to graduation.

Upon graduation, the student is eligible to be employed in a professional position at the GS-5 level. In most cases the advanced hiring rates apply, which allows a salary of GS-5, Step 7 amounting to about \$375 a month under the current schedule. After three months of experience as a regular professional employee, eligibility is established for the GS-7, Step 7 level at a monthly salary of \$445.

ARMY participation in the Cooperative Education Program has already proved its value. Students are enthusiastic about their jobs and are making a real contribution. Some have earned superior accomplishment awards; others have received special commendations. Some, too, have made significant research contributions and had their reports published.

All are able to see the theory of the class room "come to life" in Army shops and laboratories. Principles of the textbook and lecture room are transformed into practical realities, as they meet the problems and people of industry on their home ground.

Charles F. Kettering, industrialist, inventor, and for 27 years a vice-president of General Motors, recently described the program in this manner:

"Today, after more than fifty years of maturing, cooperative education is a kind of education that binds theory and practice. It is education for action.

"What gives cooperative education its strength is that it lap-welds theory from the classroom with practice on the job. It creates a weld that is much stronger than the butt-welding of a college degree followed by employment, the two touching at only one point of contact.

"The plan of a student alternating periods in school with periods in industry has been adopted to improve the educational program of many institutions of higher learning in this country. It holds particular promise for the next few years, when higher education must train more young people than at any previous time and for more diverse professions and occupations."

The Army has recognized this principle and, through its participation in the Cooperative Education Program, is taking a leading role in its advancement.

THE Defense Advisory Committee on Education in the Armed Forces recently held its 25th semi-annual meeting at Fort Belvoir, Virginia, with the Army acting as the "host service." The Committee serves as an advisory group to the Assistant Secretary of Defense (Manpower, Personnel and Reserve) and to the Director, Office of Armed Forces Information and Education, on matters pertaining to education in the Armed Forces. It provides a channel through which each military service may obtain professional advice and counsel from outstanding civilian educators. The Committee is composed of 14 appointed civilian members, 7 military members and the Director, United States Armed Forces Institute.



Soldiers of the U. S. Military Assistance Advisory Group, Germany contribute to Western defense by

TRAINING THE NEW GERMAN ARMY

Colonel H. W. Dammer

ACCORDING to ancient legend, the phoenix was a sacred bird which at the end of its life destroyed itself by fire. From the ashes remaining a new phoenix would rise.

Twice in our time the German Army has been destroyed. And now again the world witnesses its rebirth—this time with an important difference. Unlike the phoenix which reappeared in its old form, the new German Army is carefully avoiding the old forms which led to destruction.—H. W. D.

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AT THE conclusion of World War II there was a considerable body of American opinion, widely expressed, to the effect that Germany should never again be allowed to become a military power. Today the United States is helping to reconstruct the German forces, has given Germany equipment for a start, and has stationed a Military Assistance Advisory Group (MAAG) within the Federal Republic of Germany to do just what the name implies—to advise on military assistance.

This shift is attributable to two developments—the breakdown in Soviet-United States relations, and the buildup of the North Atlantic Treaty Organization of which the Federal Republic of Germany is now a member.

COLONEL H. W. DAMMER, Infantry, is Chief, Army Section, Military Assistance Advisory Group, Germany.

MILITARY assistance is authorized by the Mutual Security Act and is implemented by bilateral agreements between Germany and the United States.

Advice on military assistance was begun in 1954 when an Advance Planning Group was established as a part of Headquarters, United States European Command, to assist the German government in its initial military planning. Following the granting of sovereignty to the Federal Republic in 1955, MAAG-Germany was activated, using the Group as a nucleus, to continue this function.

To provide for advice and assistance in training matters, it was originally planned to station some 836 United States officers and enlisted personnel with German establishments. This figure was never reached, but at the high point in 1956, there were nearly 700 officers





Under guidance of a U.S. Army lieutenant, West German officers inspect an 82mm mortar.

and men at German army installations. A small percentage of these were provided by a MAAG Table of Distribution, and the bulk from United States Army, Europe.

A so-called German Training Assistance Group (GTAG) was established in Headquarters, United States Army Europe, to control and implement the program. Training teams were set up to assist at German service schools and depots in the maintenance of U.S.-furnished equipment.

These teams, organized around a nucleus of MAAG personnel, were assembled, trained and equipped at designated parent United States units. Personnel were carefully selected, not only to insure knowledge in required skills but also to insure that the

best representatives were chosen. Those selected were given a short but intensive course in spoken German at the USAREUR school at Oberammergau.

Because training equipment, training literature, and required administrative equipment was in limited supply in German units, the teams in many cases had to take these items with them, including weapons on which instruction was to be given.

Provision of training literature created peculiar problems. Initially both United States and German personnel relied on U.S.-supplied field manuals, technical manuals, graphic training aids, and other training equipment. Gradually these were replaced by German-translated documents. Lesson plans,

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programs of instruction, and related material were supplied from U. S. Army schools in the United States and Europe.

EACH training team was assigned a threefold mission—

(1) To provide instruction in accordance with highest U. S. training standards in nomenclature, functioning, operation, and maintenance of U.S.-furnished equipment.

(2) To be prepared to furnish upon request of German instructor personnel, advice concerning U. S. organization, training management, staff organization and procedures, shop organization, and tactical employment.

(3) To train selected German

assistant instructors, to enable them to conduct their own training.

Increasingly, as the Germans developed the capabilities to conduct basic instruction, the U. S. group was able to assume an advisory role. Gradually the number of U. S. Army personnel was reduced. For example, the assistance group which started at the German Infantry School at Hammelburg with a strength of 48 officers and men has, during the past 18 months, been reduced to three.

RELIANCE on United States experience, equipment, and training literature is reflected in German Army methods of instruction.

(Continued on page 42.)

Select German officers and NCO aspirants at Andernach learn assembly of the Browning .30 caliber machine gun.





A U. S. Army team demonstrates working parts of an M-47 tank to a German officer and enlisted man while (below) a German officer receives instruction from an American advisor in the intricacies of a machine gun.



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Handling and stowage of ammunition is studied by a member of a West German tank team as (below) other new German soldiers are oriented in the 3.5-inch rocket launcher for use against tanks.



Anyone familiar with the U. S. Army school system would be struck immediately, during a visit to a German school, by the similarity of methods used.

A parallel situation prevails in German depots. For lack of supplies, literature, and various forms required in supply operations, the Germans adopted many features of our own logistics system, including similar methods of receiving, storing, issuing, and accounting for items of equipment.

SOME time after this training program was launched in service schools and logistics installations, the first of the German divisions was activated, and the output of service schools was allocated to these divisions. It thus became necessary to increase the number of training teams to provide for the newly activated units. Today, as units come into existence and are supplied with equipment, the U. S. teams assist with the multitude of everyday problems which inevitably arise.

As German self-sufficiency in training has been built up, there has been a diminishing dependence on the United States for manuals, lesson plans, and other training items. A sharp reduction in numbers of U.S. Army advisory

personnel, too, has been experienced, but it is considered that some time will still be required before assistance at German sites can be terminated. Until the great gap in German junior leadership is filled—the result of eleven years during which Germany had no military forces—it will still be essential to assist with solution of the many problems encountered in developing the new German forces.

Meanwhile, it has been found feasible to place the United States training participation directly under MAAG, and to eliminate the German Training Assistance Group, USAREUR, which had previously discharged these responsibilities.

At present the Army Section, MAAG-Germany has 31 training teams at 55 German installations. These teams are stationed at 15 schools, 7 divisions, and 17 logistics installations and units throughout the Federal Republic of Germany. Their mission remains as before—to advise on military assistance.

As the German Army continues to build, the influence of these United States officers and men continues to expand. The result has been an increasingly close alignment of the German army with that of the United States in a common cause—defense of the West against Communist aggression.

SCORING 21 first places out of the 47 individual and team rifle and pistol matches, Army shooters won four of the five trophies at stake in the 1957 National Trophy Matches recently concluded at Camp Perry, Ohio. The Army Blue Team also took the "grand prize" of the National Matches when it won the coveted National Trophy Rifle Team Match.

What's New in

Training AIDs

Keep your organization current with the latest training materials by referring to this section in each issue.

TRAINING LITERATURE

While the following new literature will be published shortly, units are cautioned **NOT** to requisition copies until receipt of automatic initial distribution or the items are listed in DA Pamphlets 310-3 or 310-4.

Armored Division. The following revised field manuals have been prepared for units of ROCAD divisions:

FM 17-35, Armored Cavalry Units, Armor and Infantry Divisions, (Note: this manual is also used for ROCID divisions).

FM 17-70, Signal Communication in the Armored Division.

Army Aircraft. Two new I-series technical manuals have been prepared for the Army aircraft flight instruction program:

TM 1-(), Principles of Rotary Wing Flight.

TM 1-(), Principles of Fixed Wing Flight.

Physical Training. This new technical manual (TM 21-200), designed as a guide for the military instructor, supplements FM 21-20.

TRAINING AIDS

Training Films recently released include:

TF 8-2292, First Aid — Part I — Major Wounds and Fractures.

TF 9-2508, Transportation of Ammunition — Part II — By Rail.

TF11-2526, Radio Set AN/GRC-9.

TF11-2527, Training Generator AN/URA-T1. (Demonstrates capability, installation and operation of generator for jamming signals.)

TF11-2385, Safe Loading Procedures 90-mm Tank Gun.

TF17-2496, Tank Recovery Vehicle M-74 — Part I — Preparing for Boom Operation.

TF17-2497, Tank Recovery Vehicle M-74 — Part II — Rigging for Live Boom Operation.

ARMY EXTENSION COURSES

The following new or revised subcourses have recently been published:

Infantry Division. Subcourses dealing with the reorganized division (ROCID) include:

CGSC

Subcourse Title

16 Activating and Training a New Division.

6 The Infantry Division.

26b Infantry Division Operations.

13 Infantry Division—Offensive Operations—I.

21 Infantry Division—Offensive Operations—II.

22 Infantry Division—Defensive Operations—II.

19 Infantry Division—Retrograde Operations.

Armored Division. Subcourses relating to the reorganized armored division (ROCAD) include:

CGSC

Subcourse Title

18 The Armored Division.

17 Armored Division Operations—I.

Airborne Corps Operations, CGSC Subcourse 32. U. S. Army Command and General Staff College. Fundamentals, techniques, and major decisions involved in planning and executing an airborne assault by a corps of three airborne divisions to seize an airhead (beachhead) to facilitate the landing and passage of amphibious forces. Command and staff functions, application of tactical principles, utilization and coordination of all available fire support means, and factors involved in extensive and continued logistical support, solely by air transportation, are emphasized.

Support and Cooperation for Combat Operations, CGSC Subcourse 15. U. S. Army Command and General Staff College. Organization, functions, and operations of the joint air-ground operation system serving the field army-tactical air force team. The impact of

atomic fire power on tactics and administration at division level, its effect on the application of the principles of offense and defense, and atomic fire support planning. Organization, capabilities, and limitations of Army Aviation.

Technical Considerations in Employment of Atomic Weapons. *CGSC Subcourse 12. U. S. Army Command and General Staff College.* Covers fundamental principles of nuclear fission and the effect of the atomic weapon; techniques employed in target analysis, selection of weapons, calculations of damages and casualties, and of residual radiation; and determination of measures for insuring troop safety.

Artillery 1. INF Subcourse 23, U. S. Army Infantry School. A general appreciation of artillery to include organization, tactical employment, fire planning, and adjustment of artillery fire.

First Aid. Common Subcourse 7. Army Medical Service School. First aid care for fractures and injuries of the body cavities; first aid care of burns and effects of heat and cold; resuscitation; treatment of common emergencies; first aid care of chemical warfare casualties.

Organization and Duties of the

Corps of Engineers. ENGR Subcourse 1. U. S. Army Engineer School. Organization, characteristics, and employment of engineer combat and combat support units; construction, maintenance and supply, and topographic units; and the engineer service organization.

Principles of Government. CAMC Subcourse 35. U. S. Army Civil Affairs and Military Government School. Introduction to democratic and non-democratic government and techniques of maintaining them; uses of coercive and non-coercive forms of administrative devices; principles of a centralized and decentralized government; principles of administrative organization; organization and powers of local government.

FM Radio Receivers and Transmitters, Subcourse 108. U. S. Army Signal School. Principles and methods of producing frequency modulation, basic FM transmitter circuits to include reactance-tube modulators, phase modulators, frequency multipliers, and AFC circuits; basic FM receiver circuits to include wide-band amplifiers, limiters, discriminators, and ratio detector circuits; familiarization with typical FM equipment in military use.

National Resources Conferences

Currently under way, National Resources Conferences conducted by the Extension Division of the Industrial College of the Armed Forces will continue through May 1958. Sixteen cities will be visited by teams of Army, Navy, Air Force and Marine Corps officers from the College faculty. Each conference runs for two weeks, four hours a day, five days a week, and consists of some 30 illustrated lectures and group discussions, supplemented by motion picture presentations and trips to local industrial plants.

Dates for the remainder of this year and for spring of 1958 are: Memphis, Tennessee, 2-13 December; Fresno, California, and Indianapolis, Indiana, 13-24 January; Los Angeles and Boston, 10-21 February; Charleston, West Virginia, and Philadelphia, 17-28 March; Rochester, New York, and Fort Worth, Texas, 14-25

April; Montgomery, Alabama, and Bridgeport, Connecticut, 12-23 May.

Army, Air Force, and Naval Reserve officers, not on extended active duty, who desire to attend the conferences may apply through channels to their respective area commanders. Upon selection, Reserve officers are ordered to active duty for two weeks of instruction.

Regular officers and Reserve and National Guard officers on extended active duty may apply for attendance orders from their immediate headquarters following approval by the conference administrator.

Civilian conferees are chosen by a civilian selection committee in each city, to provide a representative cross-section of industry, agriculture, labor, business, the professions, religion, education, women's organizations, and civic community life.

PARAGRAPHS

from

The Pentagon and the Field



Gulf Stream, the Army's largest command post and field training exercise in 1958, is scheduled for the Louisiana maneuver area 26 March through 15 April. Lieutenant General J. H. Collier, Fourth U. S. Army commander, has been appointed exercise director. Tactical Air Command will provide support by scheduling a concurrent air exercise. A total of 29,000 Army troops will take part.



More than 100 officers and enlisted men have been enrolled in the first class of a Missile Master school, temporarily established at Fort George G. Meade, Maryland. These men will form the nucleus of a 135-man Missile Master team in the Washington-Baltimore area when the system becomes operational in the near future. Subsequent classes will be conducted at Orlando, Florida, by the Martin Company, principal contractor for the Missile Master.

The Missile Master—a complete, semi-automatic system for the coordination of all Army air defense weapons, including the Nike-Ajax, Nike-Hercules and Hawk—will be installed in other key defenses as rapidly as equipment and trained operator personnel become available.



Two combat surveillance systems—aerial drones capable of operating in any kind of weather—will be developed under contracts recently awarded by the Army to Republic Aviation Corporation. One will be developed for immediate operational use and the other will be an advanced, future type for battlefield surveillance, using techniques such as photography, radar or infrared.



"Panatrack"—a device for simulating actual flight path of a space vehicle—has been developed at the Corps of En-

gineers' Research and Development Laboratories, Fort Belvoir, Virginia. The device projects a moving view of the terrain over which the vehicle "flies," disclosing the area as it would be seen by an observer in a space ship.



New equipment that keeps a continuous record of radiation hazards following an atomic blast is used by Army scientists during explosion tests in Nevada. The radiation detectors are installed in tanks, balloons and underground. One type of spotter pops up from the ground in periscope fashion to measure radiation at various distances from a blast. Another in a Sherman tank determines how close such an armored vehicle can approach without danger to the crew. A third set of instruments is suspended in a balloon at 1,000 feet to measure radiation hazards in the air. The new equipment was developed at Signal Engineering Laboratories, Fort Monmouth, New Jersey.



Review of the records and qualifications of more than 4,000,000 Ready Reservists has been completed by the Armed Services under requirements of the Reserve Forces Act of 1955. A total of 1,383,083 former members of the Ready Reserve have been transferred to the Standby Reserve or discharged as a result of the screening. The screening was undertaken to pare the Ready Reserve to the statutory ceiling of 2,900,000 and insure its immediate availability in event of an emergency. By the end of June 1957 when the action was completed, there were 2,371,500 officers and men in the Ready Reserve.

Suppressive fire in support of helicopter-borne troops can be supplied by the helicopters themselves when armed with rockets and machine guns, it has been shown in recent tests at the Army Aviation School, Fort Rucker, Alabama.

Weapons ranging from .30 caliber machine guns to 80mm Oerlikon rockets have been mounted in various types of helicopters in the tests. Pilots adopt infantry-type tactics to stalk a target, pop up, strike and then take cover afforded by the terrain, repeating the process from different directions. Employed in this manner, the firepower of one helicopter has been reported as about equal to that of a reinforced infantry squad.

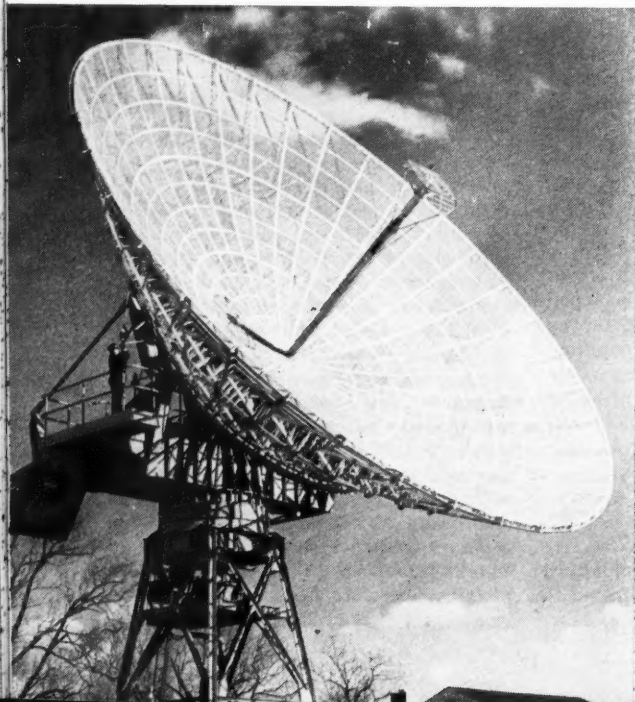


A new process for printing military maps from lithographic plates prepared by the xerographic technique has been announced by the Army Corps of Engineers Research and Development Laboratories, Fort Belvoir, Virginia. Images are prepared and fixed directly on a

xerographic plate, and the non-image area of the plate is converted chemically to a water-receptive surface. The resulting plate then can be used in a regular offset press to produce lithographic prints by conventional procedures. An important advantage is that plates may be exposed directly in a camera, thereby eliminating intermediate photographic steps.



Thirty-one Ohio State Penitentiary prisoners who risked serious illness by volunteering to test a vaccine were honored by the U. S. Army Chemical Corps as Major General William M. Creasy, Chief Chemical Officer, presented Department of the Army Certificates of Achievement. The research program to test a vaccine against tularemia, an infectious disease most commonly known as "rabbit fever," or "deer-fly fever," was initiated through a contract between the Ohio State University Research Foundation and the U. S. Army. A year after the first inoculation with living tularemia organisms, no complications have been noted among the volunteers.



Signals transmitted by powerful radar equipment of the Army Signal Corps at Fort Monmouth, New Jersey, and reflected by the surface of the moon have been received by one of the earth satellite tracking stations.

Using the giant radar transmitter Diana (left), Army Signal Corps engineers have been bouncing signals off the moon for several years. At Blossom Point, Maryland, the Navy's Minitrack Test Facility has received these signals during several test "pick ups" conducted in cooperation with engineers of the U. S. Army Signal Engineering Laboratories at Fort Monmouth, New Jersey.

A simplified Officers Assignment Preference Statement (DA Form 483) allowing an officer to change his assignment preference at any time has been approved and is expected to be ready for distribution early in 1958. With adoption of the new form, officers may submit assignment preferences at any time, rather than at specified periodic intervals as required previously.



Local civilian personnel officers will assist military personnel being released from active duty in finding civilian employment in the Department of the Army, according to Circular 601-9, which lists job vacancies in 173 categories of work. The jobs in "hard-to-fill" categories range from aeronautical engineer to Xerox operator, and include architects, attorneys, technologists, pharmacologists, physicists, engineers, biologists, geologists, chemists, economists, machinists, mathematicians, statisticians, electricians, librarians, veterinarians and many others. Electrical

engineers, for example, are needed at 30 different Army posts.



Under the Army Specialization Programs, officers can ask for and receive assignments to duties in any of nine specialized areas—intelligence, information, Army aviation, atomic energy, research and development, logistics, foreign area, civil affairs/military government, and U. S. Army Security Agency.

Current data gathered by the Deputy Chief of Staff for Personnel indicates that, as a group, officer specialists fare as well as, and in some cases better than, the rest of the officer corps in regard to promotion selection. Selection boards are instructed to disregard the "specialist" versus "generalist" classifications in making selections, and to adhere to the criterion as to whether the particular officer has the ability to carry out his duties efficiently in the higher grade.

Qualified officers are encouraged to apply for specialization, particularly in fields of research and development and of atomic energy. Application is on a volunteer basis.

Official Notes

PROCUREMENT INSPECTION. AR 715-20 establish policy and procedure concerning inspection and acceptance of supplies and services to effect uniformity and economy in Army operations.

COMMISSARIES. AR 31-105 set forth responsibilities and organization for commissaries and commissary stores.

AIR FORCE ACADEMY. AR 350-59 tell how to apply for Air Force Academy preparatory school training, which will be conducted annually at Fort Belvoir, Virginia, and Bainbridge, Maryland.

PHYSICAL EVALUATION. AR 635-40A implement provisions of title 10, United States Code relating to eligibility and processing for physical disability benefits. AR 635-B prescribe administrative procedures for implementation.

UNIT AWARDS. AR 220-105 govern awards authorized as recognition of certain types of service such as unit decorations, infantry and medical streamers, campaign and silver bands, war service and conflict streamers.

CRYPTOMATTER. AR 380-40 prescribe policies and procedures for distribution of cryptomaterial and safeguarding of cryptomatter within the Army.

AWARDS. AR 145-7 prescribe conditions under which certain awards are made in the Reserve Officers' Training Corps Program and the National Defense Cadet Corps program for outstanding achievements.

LOGISTICS. AR 55-176 define responsibilities of the various services concerned and outline procedures for conduct of non-combat logistic support operations over the shore (LOTS) in peace and war.

ARMY SECURITY AGENCY. AR 614-137 prescribe an area of specialization for qualified Regular Army officers in the Army Security Agency.

MOBILIZATION PLANNING. AR 120-5 prescribe application of the Army Mobilization Planning and Programming System effective with Fiscal Year 1959. The System provides for development of planning guidance and balanced programs throughout all echelons of the Army in terms of forces, facilities and materiel to support the current Army Strategic Capabilities Plan in event of mobilization.

RELEASE OF INFORMATION. AR 135-380 apply to classified information being made available to personnel of the reserve components.

STAFF SPECIALIST BRANCH. AR 140-7 govern qualifications for assigning reserve personnel to the Staff Specialist Branch.

VISITORS. AR 380-25 establish procedures governing visits by United States citizens and foreign nationals to Army installations and activities within the United States.

INCENTIVE AWARDS. AR 672-301 govern administration of the Army Incentive Award Program. The regulations are applicable to all commands and to rewardable contributions of all civilian employees, and to military personnel only to the extent of their participation in the suggestion phases of the program.

TRAINING. AR 621-109 establish mandatory training requirements for certain Regular Army Second Lieutenants assigned to the Infantry, Armor, Artillery, Corps of Engineers, Signal Corps, and Military Police Corps.

RECORDS ADMINISTRATION. AR 345-224 govern establishment and operation of records holding areas and oversea records centers. They assign responsibility for administering record centers in the continental United States.

PATIENT WELFARE PROGRAM. AR 40-208 prescribe policies governing the operation of the Patient Welfare Program at Army hospitals.

CIVILIAN PERSONNEL. AR 10-20 establish the organization, functions and responsibilities for civilian personnel administration within the Army.

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Improved Individual Load Carrying System

A NEW Individual Load Carrying System that replaces the present cumbersome straps and buckles, will lighten the burden of the combat soldier. The new system has been adopted as standard equipment after several years of research and development by the Army Quartermaster Corps.

At the same time a determination has been made of the tolerable and maximum load which the soldier should be able to carry under varying field conditions. The maximum is 55 pounds under march conditions. This is divided into three segments that can be used separately or in combination—a 20-pound existence load of essential survival items; a 25-pound battle load of weapons and ammunition; and a 10-pound full field load of additional existence items such as sleeping bag and extra clothing.

THE new load carrying equipment will be introduced into the supply system as stocks of present equipment are exhausted. It consists of two basic components—a specially designed belt, and shoulder padded suspenders. This distributes the load, and makes adjustment, attachment and detachment of components easier and simpler.

The H-type suspenders, which support the weight of the belt, pass over the shoulders and straight down without crossing in back. Special bolt-type fasteners increase speed and ease of attaching and detaching components carried from the belt. The sleeping bag carrier straps are secured to the front of the suspenders by snap fasteners, so that the bag can be released and dropped instantly in combat.

(For view of Individual Load Carrying System, see back cover.)

**Improved
Individual
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THE U. S. ARMY—A KEY TO PEACE

